UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,963	02/15/2002	William Bares	9259-2	1465

20792 7590 03/16/2005

MYERS BIGEL SIBLEY & SAJOVEC
PO BOX 37428
RALEIGH, NC 27627

EXAMINER	
KERN, MATTHEW C	
ART UNIT	**PAPER NUMBER**
2654	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/076,963	BARES ET AL.	
	Examiner	Art Unit	
	Kern Matthew	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-66 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-66 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 02/15/2002.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 1-6,8-12,14-16,23-28,30-34,36-38,45-50,52-56, and 58-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Fratkina et al. (Us Patent Application Publication 2001/004968).

As per claims 1, 23, 45, Fratkina et al. teach a method of responding to a customer (customer, para [0007], line 2) communication comprising:

- receiving an utterance (asking only questions, para [0013], line 7) from the customer at an agent executing on a data processing system(dialog engine, which the examiner interprets as fulfilling the definition of an "intelligent agent", "personal agent", "knowbot" or "droid", which is a search tool that automatically seeks out relevant online information based on a user's specifications, para [0014], line 8) ;

- generating a response to the utterance received from the customer at the agent based on a knowledge base (knowledge base, para[0012], line 3) that comprises information extracted from at least one exemplary conversation (problem resolutions, para[0012], line 7; and, dialog designer model the way an expert elicits information, para [0013], lines 13-15), wherein the at least one exemplary conversation comprises an exchange of utterances (model the way an expert elicits information, para [0013], lines 13-15, implying that a question and answer session occurs, thus implying a dialogue or exchange of information);
- sending the response from the agent to the customer (automated system is delivered using an interactive voice response, para [0015], line 7);

As per claims 2,24,46, Fratkina et al. teach generating the response to the utterance received from the customer (Are you asking about: Windows 95, 98,or 2000?, para [0099-0101]) comprising:

- analyzing the utterance received from the customer based on at least one of the following: at least one prior utterance received from the customer (How do I install Windows?, para [0097], line 5).

As per claims 3,25,47, Fratkina et al. teach a method where:

- at least one prior utterance received from the customer ("I am getting an error when installing the software", para [0095]) and the at least one prior response sent from the agent to the customer (PQ:1245, para[0095]) provide a

contextual framework (autocontextualization, para [0095]) for analyzing the utterance received from the customer.

As per claims 4,26,48, Fratkina et al teach a method comprising:

- maintaining a conversation model having a current state (initial session state, para [0091], line 2 and iteration N+1, fig 11) that is representative of the at least one prior utterance received from the customer(eggs, figure 11, element 1110, iteration N) and the at least one prior response sent from the agent to the customer ("which of the following would you like to get?, figure 11, element 1110); and
- updating the current state (changes the session state, para [0095] and scrambled, Figure 11, iteration N+2) of the conversation model based on the utterance received from the customer (scrambled, figure 11, element 1120) and the response sent from the agent to the customer("How would you like youre eggs prepared, figure 11, element 1120);

As per claims 5,27,49, Fratkina et al teach a method where analyzing the utterance received from the customer comprises at least one of the following:

- recognizing a part of the utterance (keywords, para. [0069], line 3) received from the customer based on the knowledge base (knowledge map, fig 3, element 234) that comprises the information extracted from the at least one exemplary conversation (history of the traversal para [0311], and used for generating constraints and preferences, which is interpreted to mean using

previous answers to analyze the present utterance and respond in a favorable manner, para [0311]).

As per claims 6,28,50, Fratkina et al. teach a method wherein the utterance received from the customer comprises a plurality of data strings ("two for lunch" and yes, I am on a high protein diet, figure 19), and wherein recognizing the part of the utterance received from the customer comprises at least one of the following:

- recognizing one of the plurality of data strings (two for lunch, figure 19) based on the knowledge base (knowledge map, figure 3, element 234) that comprises the information extracted from the at least one exemplary conversation(history of the traversal and generating constraints and preferences, para. [0311]).

As per claim 8,30,52, Fratkina et al. do teach :

- a method wherein recognizing the part of the utterance received from the customer (keywords, para. [0069], line 3).
- associating the utterance received from the customer with an information type (taxonomic relationships, para [0272]) that corresponds to at least:
  - one of a predefined information arrangement (meta data constraint, para [0273], ie list of authors); and,
  - a predefined information meaning ("semantic" terms and concept-based logging, para [0321]).

As per claims 9,31,53, Fratkina et al teach a method further comprising:

- sending the utterance received from the customer and the response sent from the agent to the customer to a customer service representative (CSR)(then will talk to a CSR who has the information available about the dialog the user had with the dialog engine before escalation occurred, par [0225], lines 22-25).

As per claims 10,32,54, Fratkina et al teach a method comprising sending the current state of the conversation model to the CSR (escalate action can cause some or all of the dialog state information to be forwarded to the human service representative (HSR), para [0225], lines 12-14).

The rest of the limitations are the same or similar to those in claims 3 and 4 and so are rejected as above.

As per claims 11,33,55, Fratkina et al teach a method wherein generating the response to the utterance received from the customer comprises:

- receiving a notification from a CSR of intent to communicate with the customer (a human CSR will can call the user, where the call itself is interpreted as the notification to communicate with customer, para [0225]);

As per claims 12,34,56, Fratkina et al. teach a method wherein generating the response to the utterance received from the customer (responses by the user, para [0059], lines 1-2) comprises generating at least one response to the utterance received from the customer at the agent (dialog engine, para [0181], line 11-13) based on the knowledge base (knowledge map, para [0181], lines 11-12, and knowledge map, figure 3, element 234) that comprises information extracted from the at least one exemplary conversation (history of the traversal, para [0311]); and wherein sending the response from the agent to the customer comprises: sending the at least one response to the CSR (then will talk to a CSR who has the information available about the dialog the user had with the dialog engine before escalation occurred, para [0225], lines 22-25).

Fratkina et al teach neither receiving a selection of one of the at least one response from the CSR at the agent nor sending the selected one of the at least one response from the agent to the customer. However, the examiner takes Official Notice that it is old and well-known in the art to send a response from a CSR to an agent first before having the server send it to a customer. Therefore, it would have been obvious for one of ordinary skill at the time of invention to have the CSR send his/her response first to the agent before sending it to the user so that a record of the response could be observed and/or later modified by the dialog designer to insure that other future responses will be correct, as taught by Fratkina et al (allow the end user to undo her previous answers if the need arise, para [0311]).

As per claims 14,36,58, Fratkina et al teach a method comprising:

- recording the utterance received from the customer and the response sent from the agent to the customer in a conversation log (The logs can record any and/or all aspects of the dialog engine's interaction with users, para [0312], lines 5-7 and responses to questions that involve entering text or other types of information, para [0314], lines 4-5, where other types of information is understood as voice (telephone, para [0015])).

As per claims 15,37,59, Fratkina et al teach a method comprising:

- editing the conversation log to correct (type of preferences generated from a goal is controlled by the dialog designer, para [0281], lines 1-2) the improper response if the agent sent the improper response to the customer (the success of the knowledge map and dialog control information within the dialog engine in leading users to documents and other types of resolutions to their questions implies that the logs can be used to make whatever changes are necessary to reach a desired response next time, para [0317], lines 3-5).

Fratkina et al. do not teach reviewing the conversation log to determine if the agent sent an improper response to the customer. However, the examiner takes Official Notice that it is old an well-known in the art to monitor calls to the call center for not only training and instruction purposes, but also to monitor the performance of a call center worker. This implies monitoring the dialogue exchange between customer and CSR to see if the customer is provided with the correct solution to his/her problem. Therefore, it would have been obvious for one

of ordinary skill at the time of invention to have a supervisor review the call log recorded by an agent in order to insure that the proper help is being provided by the automated call service.

As per claim 16,38,60, Fratkina et al. teach a method wherein generating the response to the utterance received from the customer comprises:

- determining if the response to the utterance received from the customer can be generated at the agent based on the knowledge base (knowledge map, figure 3, element 234) that comprises information extracted form the at least one exemplary conversation (history of the traversal, para [0311]), and;
- sending the utterance (information available about the dialog, para [0225], lines 22-24) received from the customer to a CSR (customer service representative, para[0225], line 20) if the response cannot be generated at the agent based on the knowledge base (knowledge map, figure 3, element 234) that comprises information extracted from the at least one exemplary conversation (...and the appropriate human service representative may be simply indicated as a parameter of the escalate action that is recorded by the dialog designers with a trigger..., para [0226], the trigger in this instance of not having the particular goal resolved para [0205]); and,
- generating the response to the utterance received from the customer at the CSR (allowing them to provide higher-quality customer service, para[0225], lines 16-17).

2. Claims 7,29, and 51 are rejected under 35 USC 103(a) as being unpatentable over Fratkina et al, as applied to claim 5 above, and further in view of Copperman et al (US Patent 6,711,585).

As per claims 7,29,51, Fratkina et al do not teach a method where recognizing the utterance received from the customer comprises associating the utterance received from the customer with an information type that corresponds to a least one of a predefined information arrangement and a predefined information meaning. Copperman et al, however, teach all three: recognizing the utterance received from the customer comprises associating the utterance received from the customer with an information type (taxonomies, col 5, line 15) that corresponds to a least one of a predefined information arrangement (knowledge container, eg. answers to questions, col 5, lines 20-23) and a predefined information meaning (a previously asked question, col 5, table 1, lines 57-60). It would have been obvious for one of ordinary skill at the time of invention to have Fratkina et al. method have the classification system described by Copperman so that information can be found easily with the advantage of context and domain knowledge, as taught by Copperman (col 1, lines 64-65).

3. Claims 13,35,57 are rejected under 35 USC 103(a) as being unpatentable over Fratkina et al, as applied to claim 11 above, and further in view of Busey et al (US Patent 6,377,944).

As per claims 13,35,57, Fratkina et al teach a method receiving a proposed response from the CSR at the agent (dialog engine and CSRs located at the dialog engine server, para [0180], lines 10-11). Fratkina et al do not teach determining if the proposed response is appropriate to be sent to the customer. Busey et al, however, teach this (agent responses that are created "on the fly" as answers to customers problems implies that the system can determine whether the response was created on an impromptu/ expedient basis, and thus deemed not reviewed by a higher-up, and thus determined "not appropriate", col 13, lines 14-15). Therefore, it would have been obvious for one of ordinary skill at the time of invention to include in the method of Fratkina et al Busey's ability to determine whether a response is appropriate because, if it were not, a customer could become frustrated with the customer support of this particular company and may decide to purchase future products from a competitor.

Further, Fratkina et al do not teach sending the proposed response to a supervisor for approval if the proposed response is determined to be inappropriate. Busey et al, however, teach this (entries ("on-the-fly" agent responses submitted to this queue do not become Knowledge Base entries until approved by a supervisor, col 13, lines 4-6)). Therefore, it would have been

obvious for one of ordinary skill at the time of invention to include in Fratkina's method Busey's ability to send a message to a supervisor for approval before it is entered into the knowledge base to insure that the answer a customer receives is relevant to a his/her problem.

Finally, Fratkina does not send the proposed response to the customer if the proposed response is determined to be appropriate. However, the examiner takes Official Notice that it is old and well-known in the art to send an approved message to a waiting customer. Therefore, it would have been obvious for one of ordinary skill at the time of invention to include in the method of Fratkima and Busey this approved message-sending capability so as not to keep the customer waiting for a correct response.

4. Claims 17-22,39-44 and 61-66 are rejected under 35 U.S.C. 102(e) as being unpatentable by Fratkina et al.

As per claims 17,39,61, Fratkina et al teach a method of training an agent to respond to a customer communication, comprising:

- compiling at least one exemplary conversation, where in the at least one exemplar conversation comprises an exchange of utterance (initial questions, user's responses, para [0014], lines 7 and 10);
- annotating the compiled at least one conversation to categorize information contained therein (meta-data representation, interpreted as data representing other data, para [0045], lines 2-3);

- processing the annotated at least one conversation using a machine learning engine (dialog engine, para [0047, line 1]) to populate a knowledge base (Knowledge Map, a representation of a Knowledge base, para [0047], line 3);

As per claims 18,40,62, Fratkina et al teach a method wherein annotating the compiled at least one conversation comprises:

- presenting a user with a plurality of categories (dialog engine interacts with users to create and refine the knowledge session tags, para [0077], lines 1-2 in combination with figure 5, elements 60 and 70; and, The Dialog engine utilizes a range of interaction forms to elicit additional information from the user, para [0077], lines 2-4, and) for annotating the at least one conversation; and
- associating respective one of the plurality of categories with respective parts of the at least oen conversation based on user input (autocontextualization process, para [0069], lines 5).

As per claims 19,41,63, Fratkina et al teach a method wherein parts of the utterances comprising the at least one conversation comprise sentences (natural language, para [0069], line 3) and words (keywords, para [0069], line 3).

As per claims 20,42,64, Fratkina et al. teach a method wherein presenting the user with the plurality of categories comprises:

- presenting the user with a plurality of categories (Windows 95, Windows 98, or Windows 2000, para [0099], para[0100], para [0101], respectively) based

on intent for annotating (identified by tags to categorize the information within, para [0114]) the sentences (How do I install Windows?, para[0097], line 5), and

- presenting the user with a plurality of categories (Disambiguating queries(DAQs), para[0109], lines 6-8 and text DAQs, para [0115] and [0116]) based on semantic content (ambiguity of words in text, para[0116], line 2) for annotating the words.

As per claims 21,43,65, Fratkina et al teach a method comprising:

- verifying that all words that are determinative to the meaning of utterances comprising the at least one conversation are annotated (may not be safe to assume that correct concept tags have been extracted from the query, para [0355], lines 13-15 and whether or not the user is asked to verify the conclusions inferred by the system, para[0355], lines 27-29 interpreted as categorizing the information within the sentence);

As per claims 22,44,66, Fratkina et al teach a method wherein the at least one conversation comprises a conversation in which the agent was a participant (...asks the user some initial questions that are then passed to a dialog engine...to provide feedback to the user. The feedback may include follow-up questions..., para[0014], lines 6-13).

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnson et al (US Patent 6,567,805) teach an interactive automated response system using a dialog manager (agent).

Subramaniam et al. (US Patent 6,728,703) teaches a user selecting a search category from a dropdown list of search categories.

Rosenthal et al (US patent application publication 2002/0133502) teach a knowledge base for a medical system. It relies on past conversations for future responses.

3. Any inquiry concerning this communication should be directed to Mr. Matthew Kern, whose telephone number is (703) 305-4828 or fax number (703) 305-9508. The examiner can normally be reached Mondays-Fridays from 9:30 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Talivaldis Smits, can be reached at (703) 306-3011. The facsimile phone number for this Technology Center is (703) 305-9508.

Any inquiry of a general nature of relating to the status of this application should be directed to the Technology Center 2600 receptionist, whose telephone number is (703) 746-6055.

2/25/05

MCK

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER